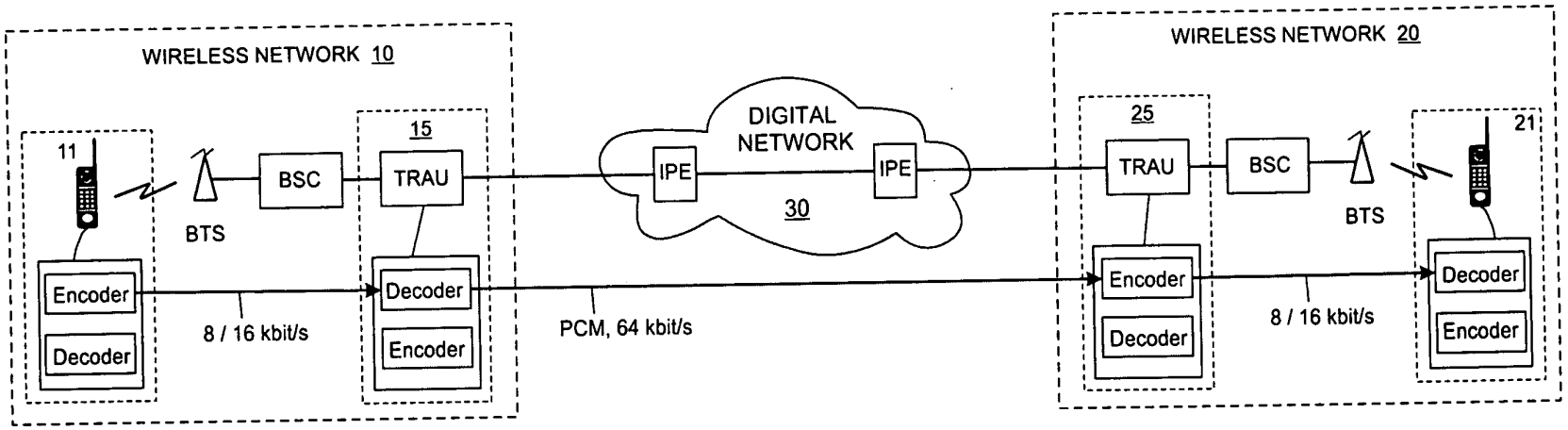

WIRELESS NETWORK 10
11
BTS
BSC
15
TRAU
Encoder
Decoder
Decoder
Encoder
8 / 16 kbit/s
DIGITAL NETWORK
IPE
IPE
30
PCM, 64 kbit/s
WIRELESS NETWORK 20
25
TRAU
BSC
BTS
21
Encoder
Decoder
Decoder
Encoder
8 / 16 kbit/s

Fig. 1

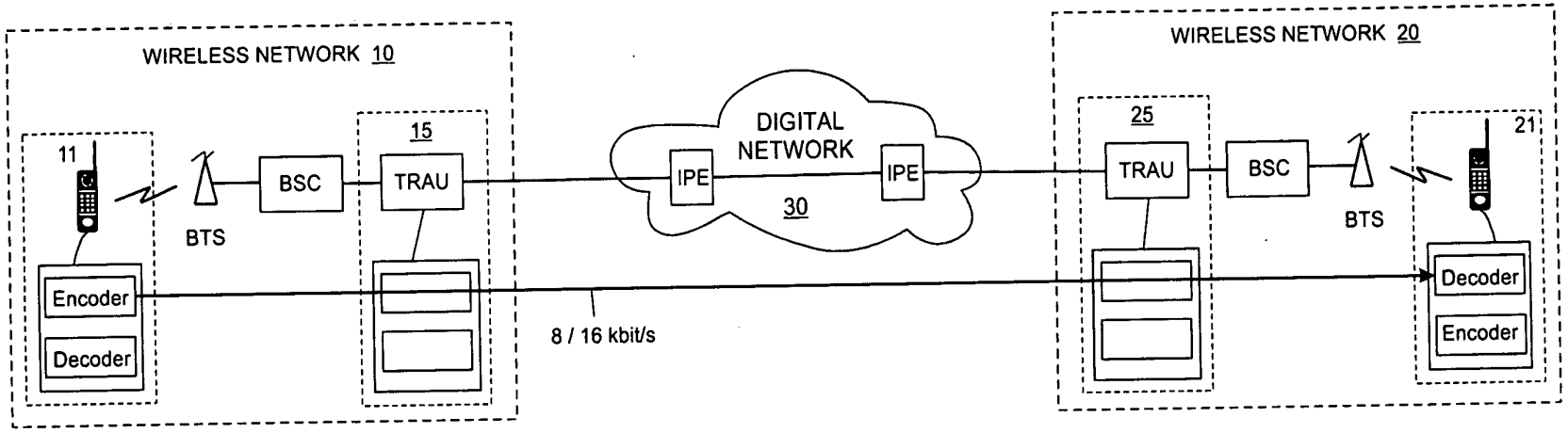

WIRELESS NETWORK 10
11
BTS
BSC
15
TRAU
Encoder
Decoder
8 / 16 kbit/s
DIGITAL NETWORK
IPE
IPE
30
WIRELESS NETWORK 20
25
TRAU
BSC
BTS
21
Decoder
Encoder

Fig. 2

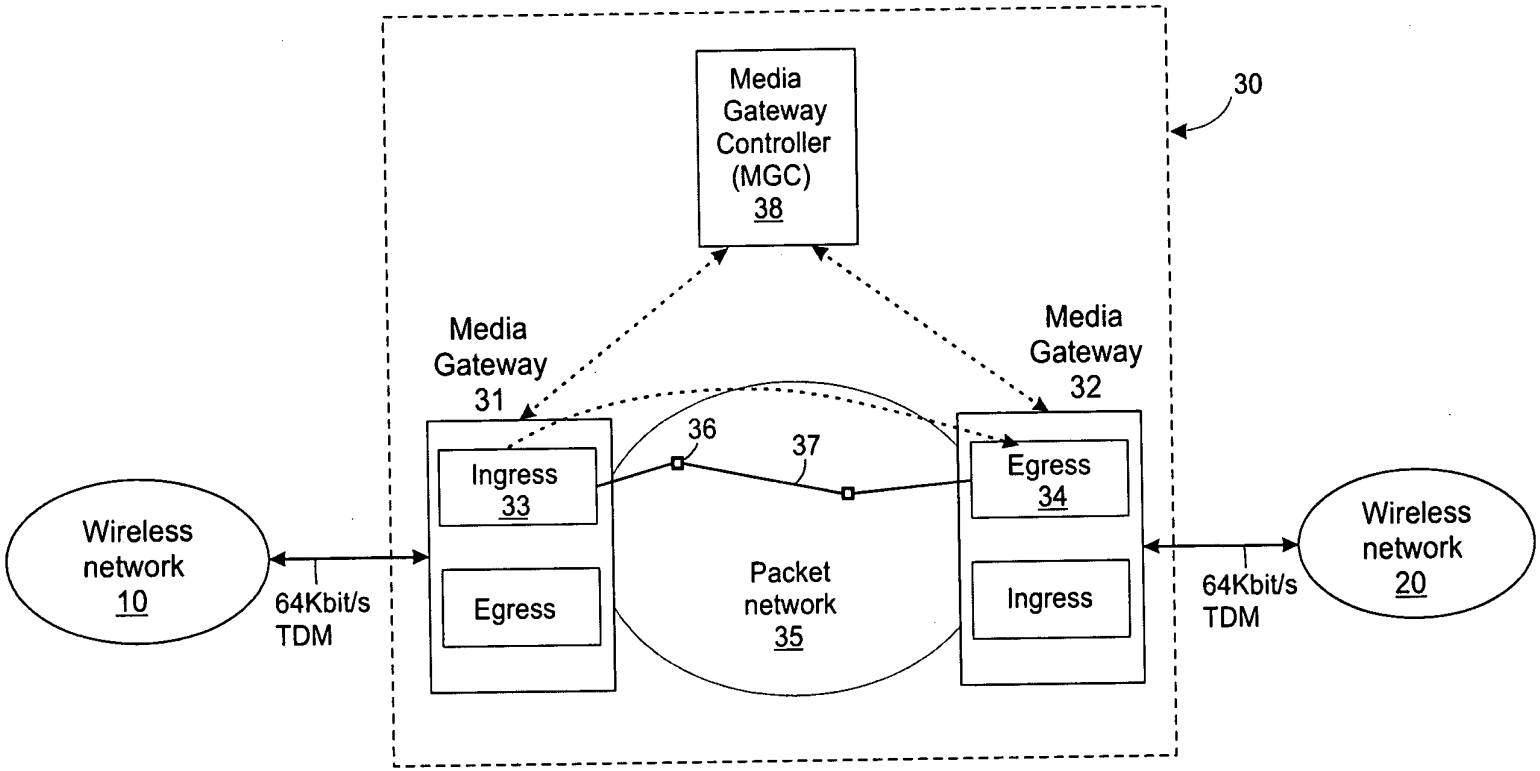

Media
Gateway
Controller
(MGC)
38
30
Media
Gateway
31
Media
Gateway
32
36
37
Ingress
33
Egress
34
Egress
Ingress
Packet
network
35
Wireless
network
10
64Kbit/s
TDM
64Kbit/s
TDM
Wireless
network
20

Fig. 3

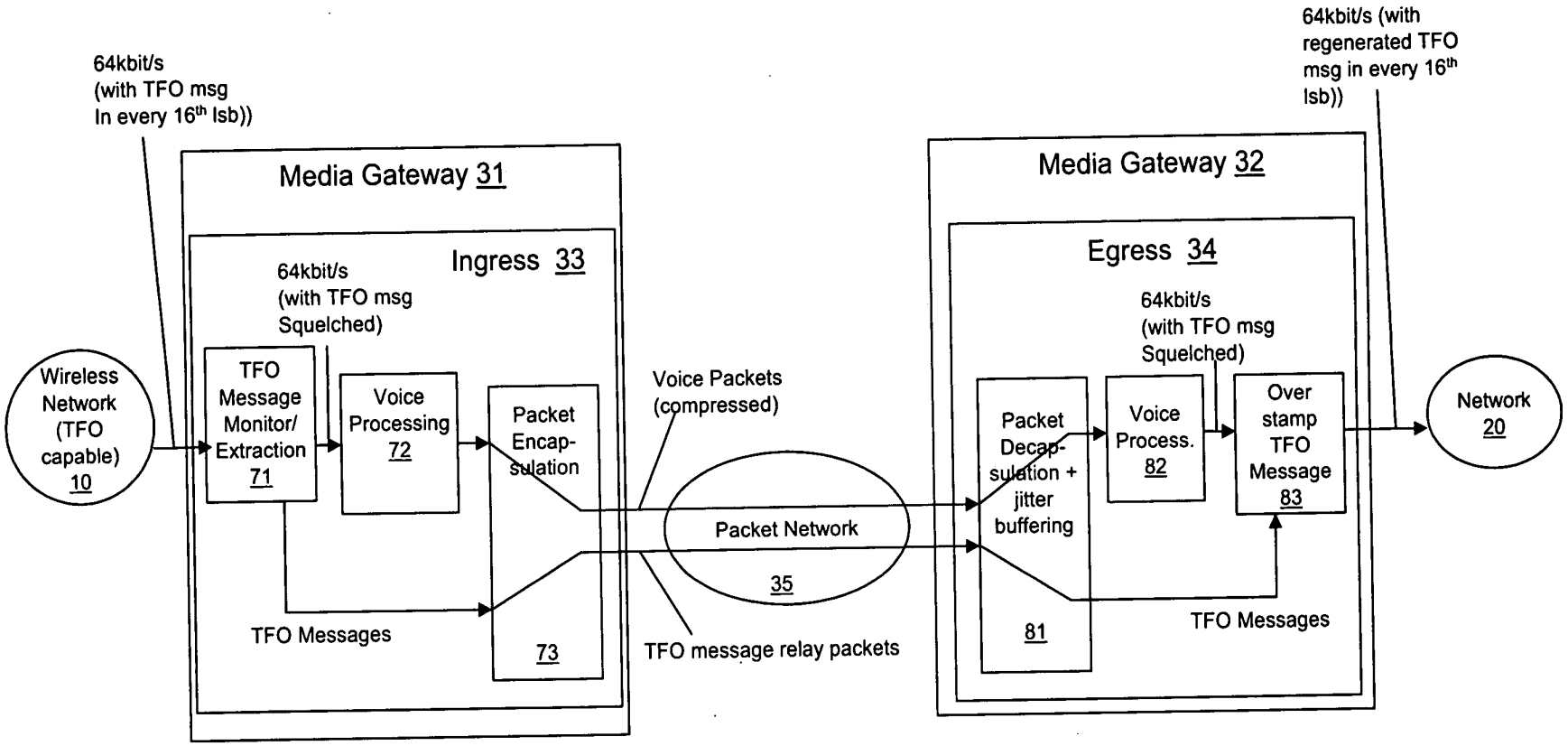

64kbit/s
(with TFO msg
In every 16th lsb))
64kbit/s (with
regenerated TFO
msg in every 16th
lsb))
Media Gateway 31
Ingress 33
64kbit/s
(with TFO msg
Squelched)
Wireless
Network
(TFO
capable)
10
TFO
Message
Monitor/
Extraction
71
Voice
Processing
72
Packet
Encap-
sulation
73
TFO Messages
Voice Packets
(compressed)
Packet Network
35
TFO message relay packets
Media Gateway 32
Egress 34
64kbit/s
(with TFO msg
Squelched)
Packet
Decap-
sulation +
jitter
buffering
81
Voice
Process.
82
Over
stamp
TFO
Message
83
TFO Messages
Network
20

Fig. 4

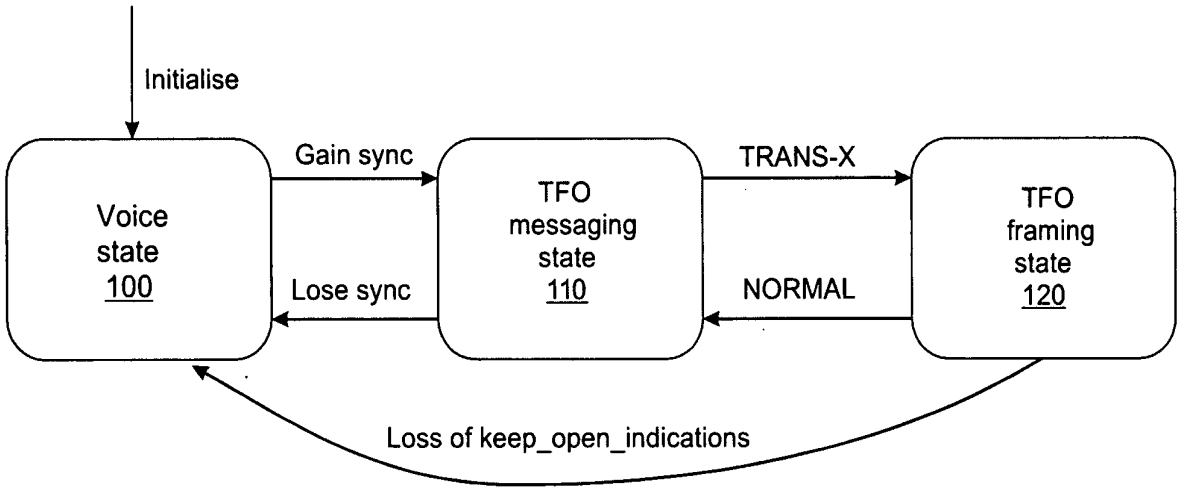

Initialise
Voice state 100
Gain sync
Lose sync
TFO messaging state 110
TRANS-X
NORMAL
TFO framing state 120
Loss of keep_open_indications

Fig. 5

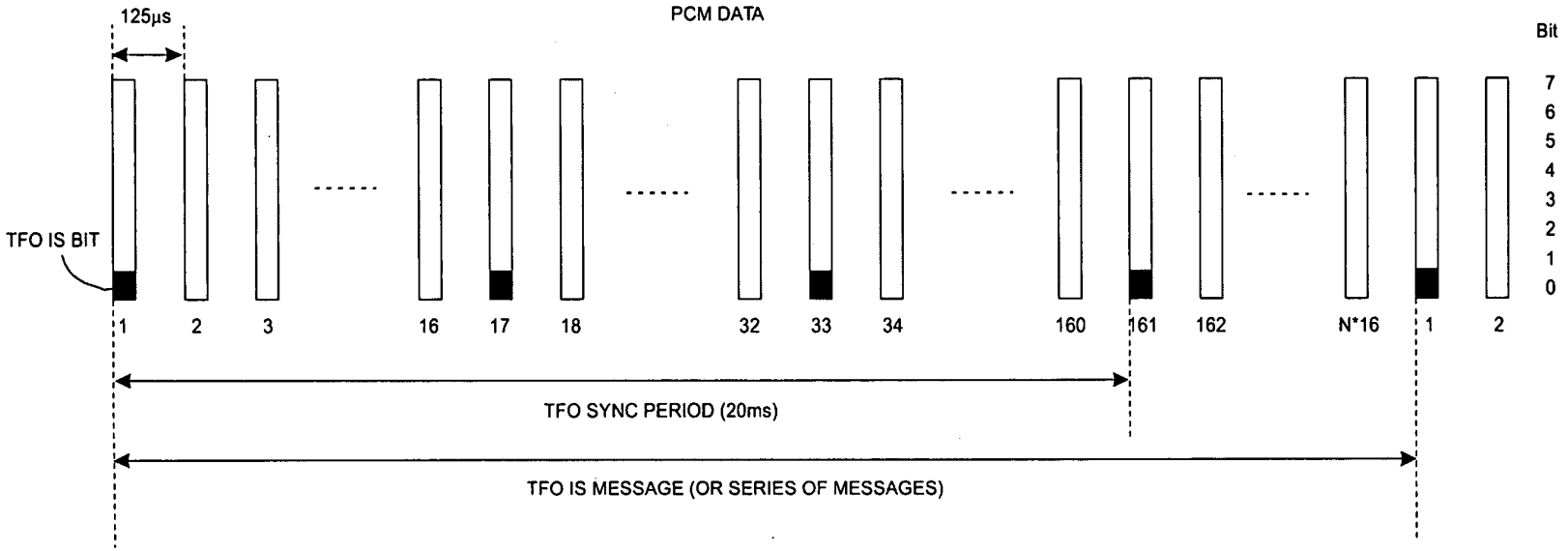

125µs
PCM DATA
Bit
7
6
5
4
3
2
1
0
TFO IS BIT
1
2
3
16
17
18
32
33
34
160
161
162
N*16
1
2
TFO SYNC PERIOD (20ms)
TFO IS MESSAGE (OR SERIES OF MESSAGES)

Fig. 6

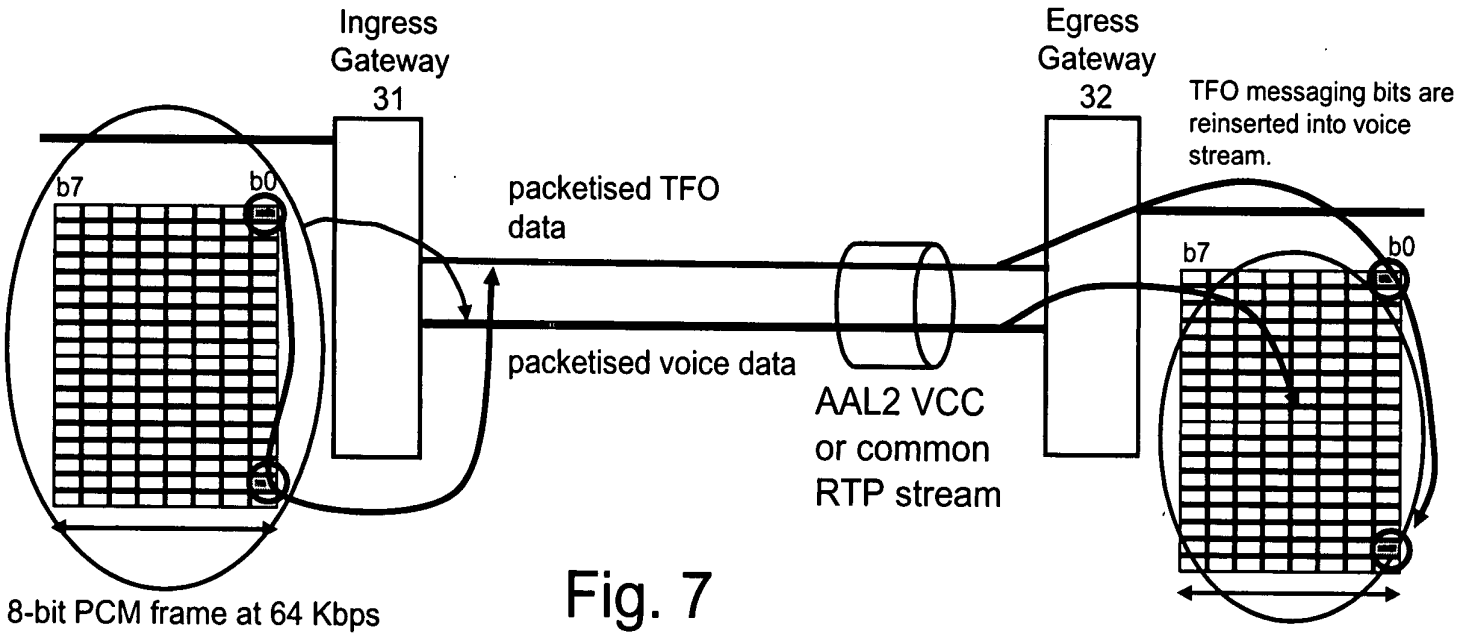

Ingress
Gateway
31
Egress
Gateway
32
TFO messaging bits are
reinserted into voice
stream.
b7
b0
packetised TFO
data
packetised voice data
AAL2 VCC
or common
RTP stream
b7
b0
8-bit PCM frame at 64 Kbps

Fig. 7

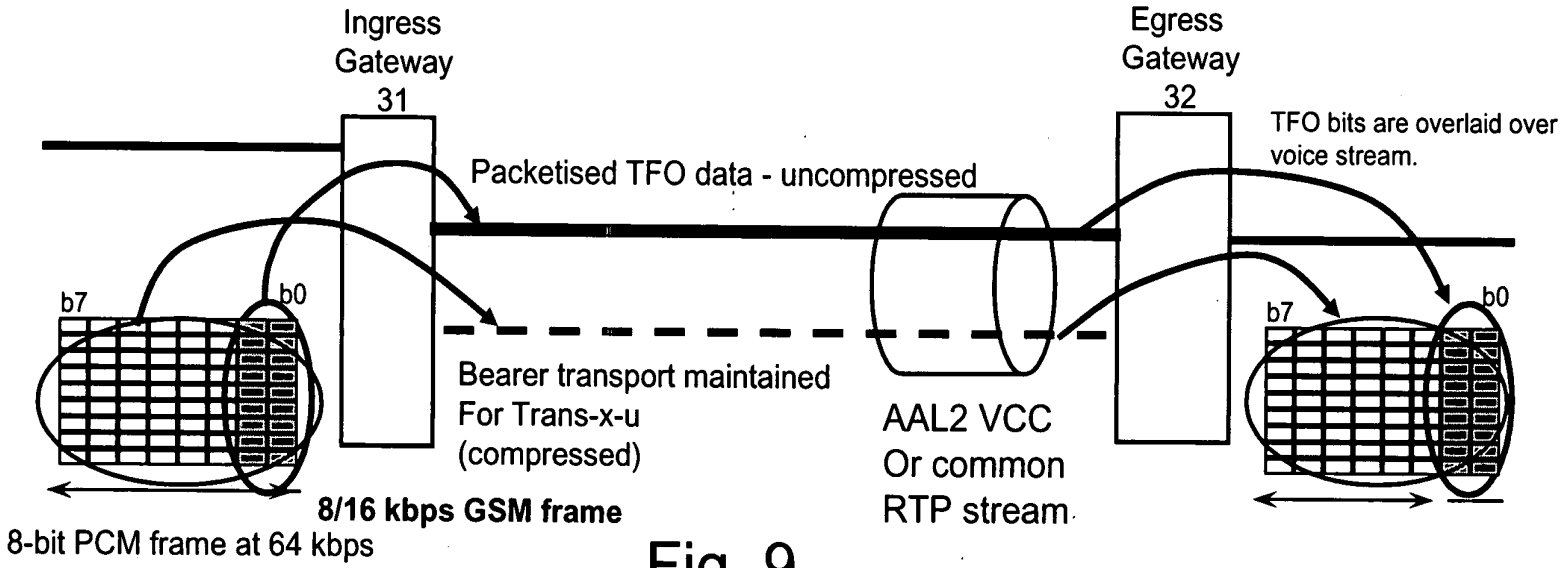
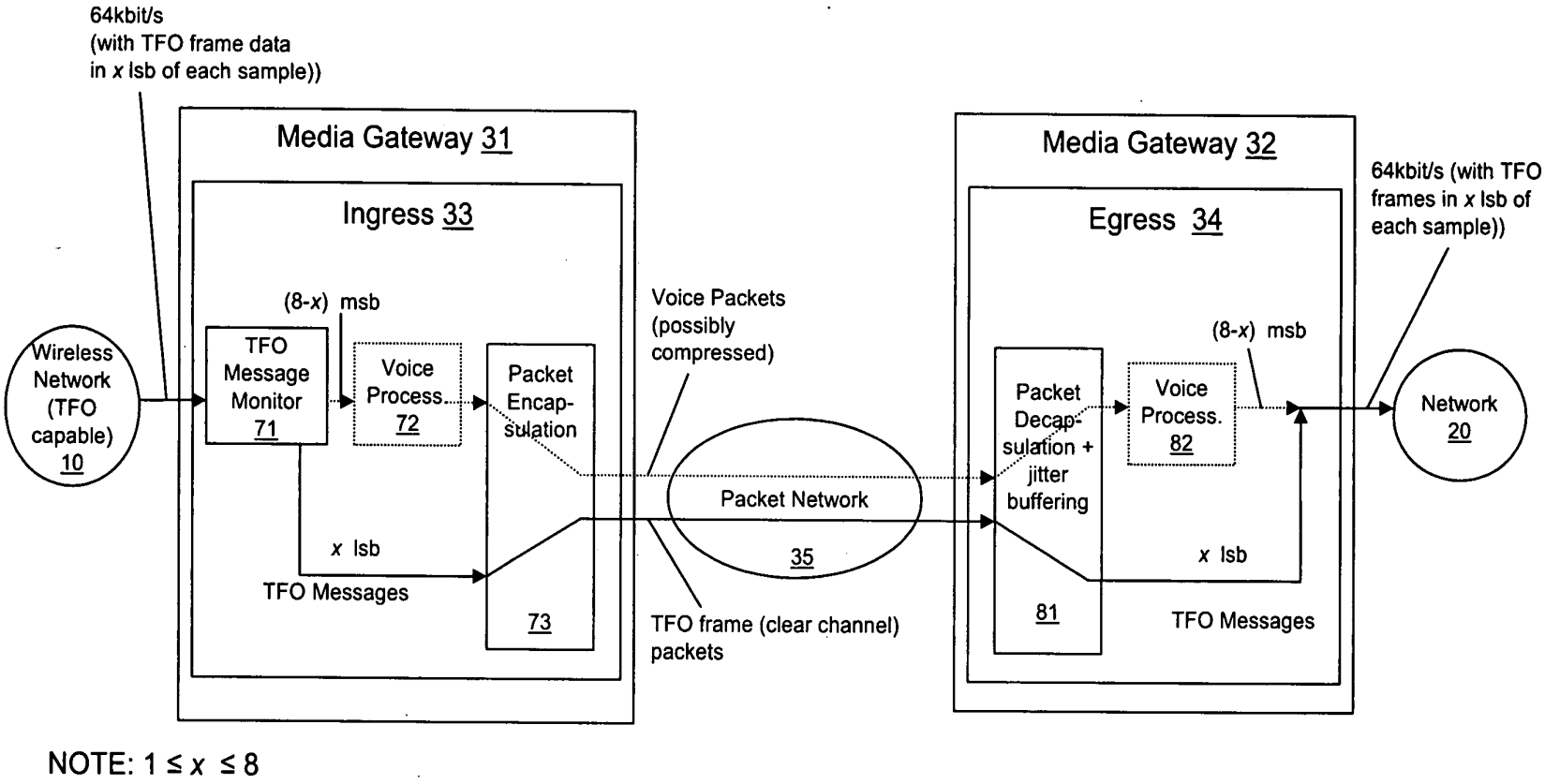

Ingress
Gateway
31
Egress
Gateway
32
TFO bits are overlaid over
voice stream.
Packetised TFO data - uncompressed
b7
b0
Bearer transport maintained
For Trans-x-u
(compressed)
AAL2 VCC
Or common
RTP stream
b7
b0
8/16 kbps GSM frame
8-bit PCM frame at 64 kbps

Fig. 9



NOTE: $1 \leq x \leq 8$

Fig. 8

Byte	1	2	...	N
	RES=0	Offset	Number of Bits	TFO Message Fragment	(PAD=0)

Fig. 10A

0								1								2								3			
0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1
RES=0				Offset=0				No. Bits=10								TFO Message Fragment								PAD=0			

Fig. 10B

0	1	2	3	4	5	6	7
0					D		

Fig. 10C

0								1								2								3			
0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1
0					D=1			FO1		FO2		FO3		FO4		FO5		FO6		FO7		FO8		FO9		FO10		FO11		FO12	
FO13		FO14		FO15		FO16		FO17		FO18		FO19		FO20		FO21		FO22		FO23		FO24		FO25		FO26		FO27		FO28	
FO29		FO30		FO31		FO32		FO33		FO34		FO35		FO36		FO37		FO38		FO39		FO40		PAD = 1							

Fig. 10D

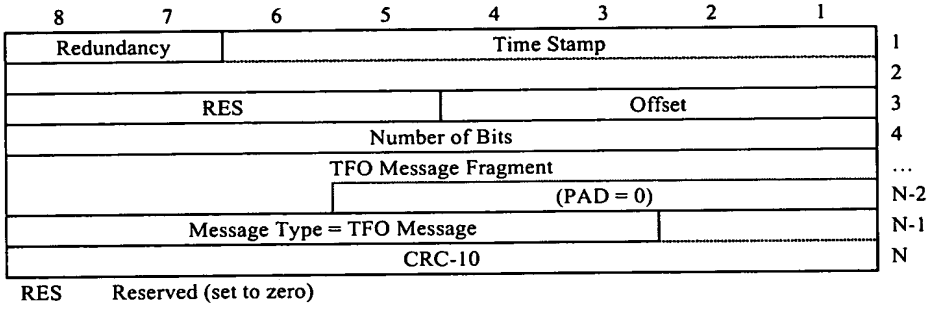


Fig. 11A

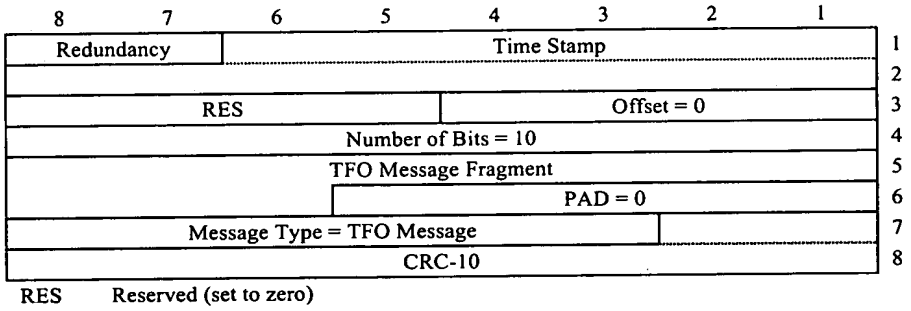
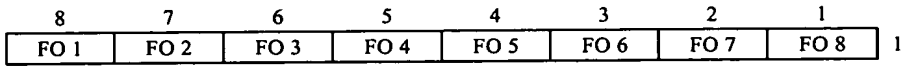
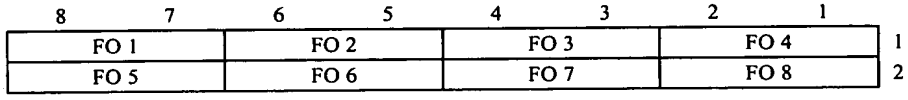


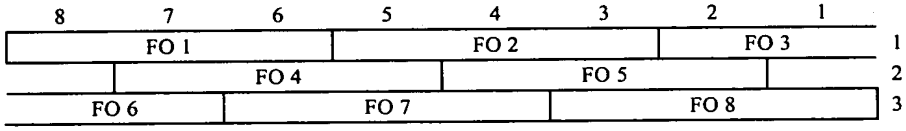
Fig. 11B



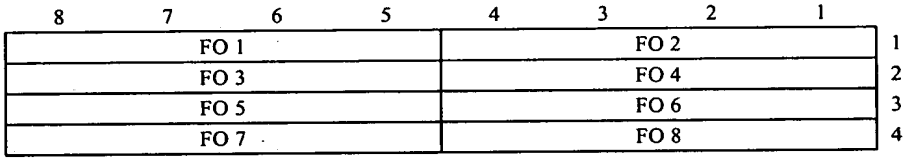
8 kbit/s circuit mode data EDU format



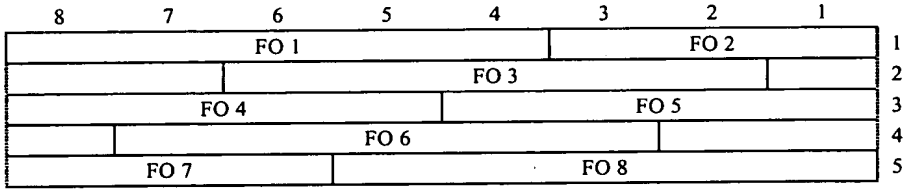
16 kbit/s circuit mode data EDU format



24 kbit/s circuit mode data EDU format

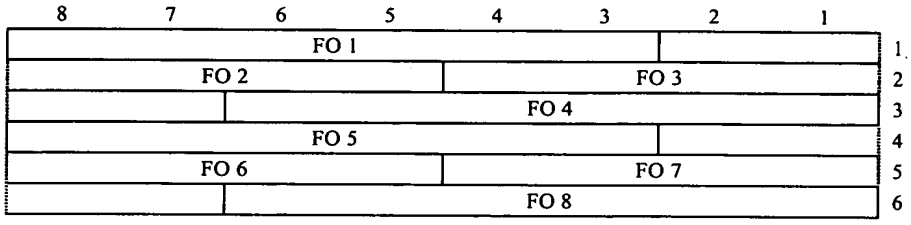


32 kbit/s circuit mode data EDU format

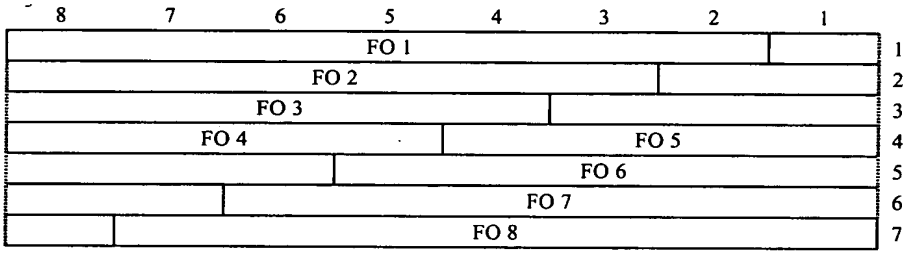


40 kbit/s circuit mode data EDU format

Fig. 11C



48 kbit/s circuit mode data EDU format



56 kbit/s circuit mode data EDU format

Fig. 11D